

# PROBABILITY

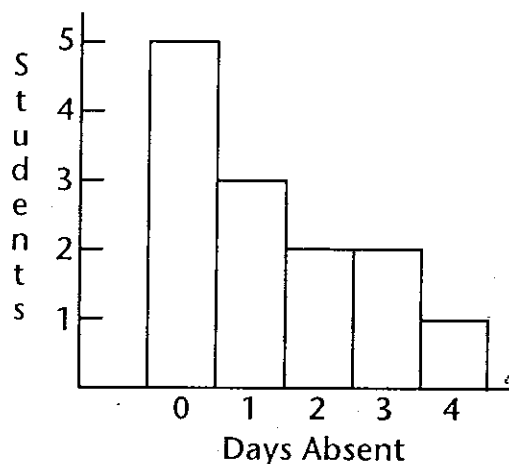
## Problem Set 52

**BROTHERS/SISTERS:** Thirty students were asked how many brothers and sisters they had. The results were as follows:

0 3 3 1 6 5 0 1 1 2  
2 2 4 0 1 4 4 3 1 5  
0 1 4 2 2 3 2 3 4 1

1. Make a tally chart and then draw a bar chart (frequency distribution) of this information.
2. What was the mean number of brothers and sisters?
3. What was the median number of brothers and sisters?
4. What percent of the students have three brothers and sisters?
5. What percent of the students have more than the mean number of brothers and sisters?

**STUDENT ABSENCES:** The bar chart shows how many days a group of students were absent last week.



6. How many students were absent 3 days?
7. How many students had perfect attendance?
8. How many students were included in the survey?
9. What percent of the students were absent 4 days?
10. Determine the mean number of absences.
11. Determine the median number of absences.

**MINIATURE GOLF:** Benjamin and Franklin played nine holes of miniature golf. The results are as follows:

Hole	1	2	3	4	5	6	7	8	9
Benjamin	4	3	5	2	2	4	3	5	2
Franklin	4	2	5	1	2	3	3	4	8

12. Determine the mean score for Benjamin.
13. Determine the mean score for Franklin.
14. Determine the median score for Benjamin.
15. Determine the median score for Franklin.
16. On the last test, 12 right-handed students averaged 70 and three left-handed students averaged 90. What was the average for the 15 students?

**GUINNESS RECORD®:** The greatest number of times a pancake has been tossed in two minutes is 281, by Judith Aldridge on February 27, 1990.

17. At that rate, how many times would she toss it in an hour?

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## Problem Set 53

**GUINNESS RECORD®:** On June 30, 1989, John Kenmuir licked and affixed 328 stamps in four minutes at George Square Post Office, Glasgow, Scotland.

1. How many did he lick and affix per minute?
2. How many did he lick and affix per second? (to the nearest tenth)
3. If each stamp cost 29¢, how much did the stamps cost?
4. If the stamps were in a roll, and each stamp was one inch long, how many feet long would the unrolled roll have been? (to the nearest tenth)

Nine students received the following numbers of pieces of mail: 1, 3, 2, 0, 1, 5, 2, 1, 3

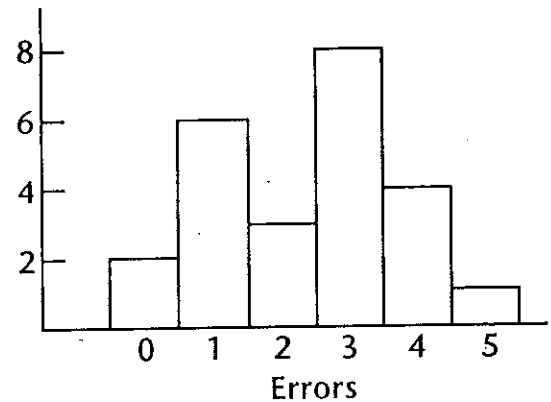
5. Determine the mean number of pieces of mail received.
6. Determine the median number of pieces of mail received.
7. Determine the range of the number of pieces of mail received.

The average monthly rainfall in Drenchville was 14 inches.

8. How many inches of rain does Drenchville receive in one year?
9. What is the least amount of rain Drenchville could have received in one month?
10. What is the largest amount of rain Drenchville could have received in one month?
11. Keziah averaged 89 on two tests. If her first test score was 86, what was her second?

**THE TERRIFIC TYPISTS:** The frequency distribution shows the number of errors made by students in a typing class.

12. How many students made three errors?
13. What was the greatest number of errors?
14. How many students were in the class?
15. Find the mean number of errors.
16. Find the median number of errors.
17. Find the range of the error.
18. What percent of the students made three errors?
19. The oldest swimmer was 97 and the range of the ages was 67. How old was the youngest swimmer?



**AN UNINTERESTING CLASS:** In a certain class, all 23 students have an IQ of 110.

20. What is the mean IQ?
21. What is the median IQ?
22. What is the range of the IQ's?
23. The year 1991 is a PALINDROME. It reads the same forward as backward. What year is the next palindrome?

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## Problem Set 57

**HAMBURGER HEAVEN:** Harry Halten, the owner of Hamburger Heaven, wanted to compare the number of hamburgers he sold between 11:00 and 1:00 with the number he sold between 4:00 and 6:00. He collected data for twenty days.

11:00–1:00

37 64 56 60 50 48 47 47 51 66  
52 58 62 44 58 50 49 55 57 48

4:00–6:00

58 68 48 50 59 67 78 66 54 49  
61 55 60 63 74 64 50 67 59 73

1. Draw an unordered back to back stem and leaf plot and then order the plot.
2. Find the range of the hamburgers sold between
  - a. 11:00–1:00
  - b. 4:00–6:00
3. Find the median number of hamburgers sold between
  - a. 11:00–1:00
  - b. 4:00–6:00
4. Find the upper quartile of the number of hamburgers sold between
  - a. 11:00–1:00
  - b. 4:00–6:00
5. The range of ages of the players on the team was 12 years. The youngest player was 19. What was the age of the oldest player?
6. The median weight of the players was 175 pounds. What does that mean?
7. The upper quartile weight was 200 pounds. What does that mean?
8. What time is the next palindrome after 5:30?
9. The odometer on Jotto's car reads 6,876. What will the mileage be when it next shows a palindrome?
10. Use the reverse and add procedure to create a palindrome from 59.

The number of days that eight students were absent from school is given: 6 5 18 4 4 6 7 2

11. What was the range of the days absent?
12. Find the mean number of days absent.
13. Find the median number of days absent.
14. Is the median or the mean a better description of the data?

**SNOW WHITE AND THE SEVEN DWARFS:** The average income of the seven dwarfs was \$300. Snow White made \$5000.

15. What was the total income of the dwarfs?
16. What was the total income of all eight characters?
17. What was the average income of all eight characters?

**GUINNESS RECORD®:** Charles Walker played 201 games of checkers simultaneously on November 5, 1988 in New Orleans, LA. He won 189 and tied 12.

18. What percent of the games did he win?

## Problem Set 59

**GUINNESS RECORD®:** On June 25, 1988 Reg Morris extinguished 22,888 flame torches in his mouth in two hours at Yule Tree School in West Midlands, England.

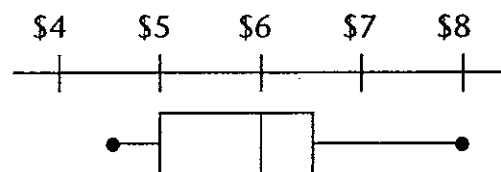
1. On the average, how many did he extinguish each minute?
2. On the average, how many did he extinguish each second?

There are 40 ghosts living in Transylvania. The oldest is 60 and the youngest is 38. The median age is 45, the upper quartile is 58, and the lower quartile is 40.

3. Draw a box and whiskers plot of this data.
4. What is the range of ages?
5. How many ghosts are older than 58?
6. How many ghosts are between 40 and 58?

The box and whiskers plot gives information about the hourly wages of 60 workers at Bruno's Bicycle Builders.

7. What is the highest wage?
8. What is the lowest wage?
9. What is the median wage?
10. What percent of the workers make between \$5.00 and \$6.50?
11. What percent of the workers make more than \$5.00?
12. How many workers make more than \$5.00?



In order to determine whether the National League or American League had more powerful hitters, Sam Statistic made a back to back stem and leaf plot comparing home runs hit by National League teams with American League teams for the 1989 season.

National		American	
7	1	2	5
		0	4
8	8 4 3 0	2	6 7 7 9
		6	7
0		1	8
7	5		4
9			
3			

13. How many teams are in the National League?
14. What was the fewest home runs hit by an American League team?
15. Determine the median for:
  - a. National League.
  - b. American League.
16. Determine the upper quartile for the
  - a. National League.
  - b. American League.
17. Determine the lower quartile for the
  - a. National League.
  - b. American League.
18. On one scale, draw a box and whiskers plot for each league.